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APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,625	06/20/2001	Ho Yin Tang	40226/DMC/B553	4370
23363	7590	12/01/2003	EXAMINER	
CHRISTIE, PARKER & HALE, LLP 350 WEST COLORADO BOULEVARD SUITE 500 PASADENA, CA 91105			BISSETT, MELANIE D	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,625

Applicant(s)

TANG ET AL.

Examiner

Melanie D. Bissett

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5,6,9,11-17 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5,6,9,14 and 34 is/are rejected.
- 7) ☒ Claim(s) 11-13,15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 903. 6) ☐ Other: _____

1. The request filed on 9/2/03 for Continued Examination under 37 CFR 1.114 based on parent Application No. 09/886,625 is acceptable and an RCE has been established. An action on the RCE follows.
2. The rejections based on 35 USC 103 have been maintained.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 14-17 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. The term "substantially most" in claim 14 is a relative term which renders the claim indefinite. The term "substantially most" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Since the terms "most" and "substantially" are both relative terms, the use of the term "substantially most" further renders the limitation indefinite. "Substantially most" would seem to encompass less than most, since "substantially" designates an uncertain range around "most". Does the applicant intend to claim any amount of a carbon black?
6. Furthermore, the phrase "one type" in claim 14 renders the claim indefinite. It is unclear whether the applicant intends the different carbon black materials to be of

different "types" or just different specific materials. Also, it is unclear what the applicant renders a "type" of carbon black. Are carbon black-type materials encompassed? How are the carbon black materials designated by type?

7. The term "substantially the first carbon black" in claim 34 is a relative term which renders the claim indefinite. The term "substantially the first carbon black" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 5-6, 9, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Konynenburg et al. in view of the combined teachings of Handa et al. and Frentzel et al.

10. From a prior Office action:

Van Konynenburg et al. discloses PTC compositions that include semi-crystalline polymer (column 8, line 29), a plasticizer (column 10, lines 53-67), and conductive carbon black particles (column 6, lines 59-66) and that have a switching temperature around 70 °C (see figure 3).

Regarding [claim 34] in the present application, where the applicant claims the use of two different types of carbon black, van Konynenburg et al. does not disclose a composition that contains two different carbon blacks. However, the method for choosing which specific carbon black is to be used in a specific composition is taught (column 6, lines 21 to column 7, line 5). Since the relevant characteristics of many different types of carbon black are listed in the reference (table 1) and since many of the carbon blacks have similar properties (e.g. types 1 and 2 in the table), it would have been prima facie obvious to one skilled in the art that a mixture of two similarly suitable carbon blacks [in any amount] would also produce a suitable PTC composition. In another

case, it also would have been obvious to one skilled in the art to use two different types of carbon black according to the criterion in the reference [in any amounts necessary] in order to tailor the properties of the resulting PTC....

Van Konynenburg et al. also does not expressly teach that the amount of plasticizer in the composition should be about 10 percent of the total weight of the polymer compound. It does teach that the amount of plasticizer should be chosen based on the processing conditions that the user requires (e.g. viscosity control). Frentzel et al. discloses the use of plasticizers in PTC compositions (column 11, lines 11-22) that are in the range specified by the applicant in claims [5 and 9]. These plasticizers are used for various purposes, including controlling viscosity of the composition. It therefore would have been obvious to one skilled in the art to use about 10 percent plasticizer in the composition in order to ease its processing.

Van Konynenburg et al., as applied above, teaches the PTC composition that the applicant claims and teaches that the composition may be used in many applications (column 1, lines 50-65). However, van Konynenburg et al. does not explicitly include the laminate structure that the applicant claims in claim 5 or the process to produce the structure in [claims 9 and 34]. Handa et al. discloses a known method for producing a PTC device (column 6, lines 34-43 and column 7, lines 4-21) according to [claim 9] as well as the laminate structure of claim 5 (column 7, lines 4-21). The PTC device is useful in circuit protection because it protects the circuit from excess current (column 1, line 6).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the composition taught in van Konynenburg et al. in the laminate structure and process for producing that structure taught in Handa et al. The motivation for doing so would be to create an easily processed PTC suitable for use in as a circuit protector. It also would have been obvious to a person of ordinary skill in the art to use about 10 percent plasticizer in the inventions taught by the combined teachings of van Konynenburg et al. and Handa et al. The motivation for doing so would be to control the viscosity of the PTC composition. Therefore it would have been obvious to combine Handa et al. and Frentzel et al. with van Konynenburg et al. to obtain the invention as specified in claims [5-6, 9, and 34].

Allowable Subject Matter

11. Claims 11-13 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The closest prior art, Konynenburg et al., describes the use of plasticizers but does not specify the use of micronized polyester wax plasticizers. Although it may be held obvious to use micronized wax plasticizers in the invention of Konynenburg et al., the use of micronized *polyester* wax plasticizers renders the invention unobvious. Thus, the applicant's claims including micronized polyester wax plasticizers in the claimed device or method provide a novel and unobvious step over the prior art.

Response to Arguments

14. In response to the applicant's arguments that the reference does not teach the use of two carbon black materials, it is noted that the reference gives specific instruction to choosing carbon black materials to suit the invention. It is the examiner's position that one of ordinary skill in the polymer or filler art would know that a combination of filler materials having similar properties would provide similar results to those of the single material. Additionally, one of ordinary skill in the polymer or filler art would know that blending two filler materials having similar but different properties would provide a combined benefit resulting from each of the individual properties. Such a modification would have been evident without undue experimentation. In other words, the use of more than one filler material is not outside the common practice of one of ordinary skill in the art.

15. Regarding the applicant's arguments that the Office action points to materials outside the invention of the reference (comparative examples), note that the carbon black materials of Table 1 indicate several materials having similar properties. This was the intent of pointing to Table 1. Note the similarity of Types 18 and 19, or 9 and 10. These comparisons are only meant as examples of the evidence in Table 1.

16. In response to the applicant's argument that the mixture of two carbon blacks would not have beneficial properties according to Konynenburg et al., it is the examiner's position that one of ordinary skill in the art would have been motivated to combine filler materials by the expectancy of forming at least equally improved PTC materials. Any other benefits according to the combined properties of the fillers would be evident without undue experimentation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


RABON SERGENT
PRIMARY EXAMINER